

Notice of Allowability

Application No.

10/823,023

Examiner

HOAN C. NGUYEN

Applicant(s)

MATSUYAMA, HIROAKI

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to AF filed on 10/27/2006.
2. ☐ The allowed claim(s) is/are 4,15,21,22,34,36-38,42-46 and 48.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Applicants have amended claim 42 with the allowed feature in the original claim 47.

Claim 47 must be cancelled.

The title is changed into "the liquid crystal display with curved alignment surface."

DETAILED ACTION

Foreign Priority (August 28, 1998) with the English translation submitted in the parent case 09/384186 on 12/29/2003.

In the previous Final Action, claims 4, 15 and 21-22 allowed. The allowed feature in claim 39 is placed in the amended claim 34; claim 39 is now canceled. The allowed feature in claim 47 is placed in the amended claim 42; claim 47 is now canceled.

Claims 1-3, 5-14, 16-20, 23-33, 35, 39-41, 47 and 49 have been cancelled. Claims 4, 15, 21-22, 34, 35-38, 42-46 and 48 are pending.

Allowable Subject Matter

Claims 4, 15, 21-22, 34, 35-38, 42-46 and 48 are allowed.

Reasons for Allowance

Claims 4, 15 and 21 are allowed since there is no prior art before August 28, 1998 (Foreign Priority) teaches an active-matrix liquid crystal display device comprising

- said orientation layer on the pixel electrode formed into a curved surface and oriented molecules of the liquid crystal aligned in a direction normal to the curved surface of said orientation layer,

- at least one columnar spacer having a diameter varying along its axis is provided between the two opposing plates for regulating a panel gap therebetween, said at least one columnar spacer disposed approximately at a center of a pixel.

Claim 22 is allowed since it depends on the allowed claim 21.

Claim 34 is allowed since there is no prior art before August 28, 1998 (Foreign Priority) teaches an active-matrix liquid crystal display device comprising the orientation layer formed into a curved or slanted surface so as to orient molecules of the liquid crystal in a defined direction normal to the curved or slanted surface of said orientation layer wherein the at least one columnar spacer disposed approximately at center of the pixel.

Claims 36-38 are allowed since they depend on the allowed claim 34.

Claim 42 is allowed since there is no prior art before August 28, 1998 (Foreign Priority) teaches an active-matrix liquid crystal display device comprising the orientation and pixel electrode are convex-shaped wherein the at least one columnar spacer disposed approximately at center of the pixel.

Claims 43-46 and 48 are allowed since they depend on the allowed claim 42.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany

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the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to HOAN C. NGUYEN whose telephone number is (571) 272-2296. The examiner can normally be reached on MONDAY-THURSDAY:8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (571) 272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HOAN C. NGUYEN
Examiner
Art Unit 2871

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ANDREW SCHECHTER
PRIMARY EXAMINER